

---

## TUBERCULOSIS, LATENT INFECTION (LTBI)

---

**Clinical Features:** There are no systemic symptoms for latent TB infection (LTBI). Targeted testing programs exist to identify persons who are at high risk for LTBI and who would benefit from treatment.

**Causative Agent:** Mycobacterium tuberculosis complex. This complex includes *M. tuberculosis* and *M. africanum* (primarily from humans), and *M. bovis* (primarily from cattle).

**Mode of Transmission:** Exposure to tubercle bacilli through inhalation of airborne droplet nuclei from a person with active pulmonary/laryngeal TB. Prolonged close contact with an infectious case may lead to infection.

**Incubation Period:** approximately 2 –12 weeks from infection to demonstrable primary lesion or significant tuberculin reaction. A latent, dormant TB infection can become active years after the initial infection; the incubation period can last for years.

**Period of Communicability:** By definition, LTBI is not infectious.

**Public Health Significance:** Epidemics of tuberculosis have occurred among individuals in enclosed places, such as nursing homes, jails, hospitals, schools, office buildings, and factories. Recent immigrants, close contacts of an active TB case, HIV positive individuals, and persons with certain medical conditions (i.e. diabetes, cancer) are all high risk for developing TB disease once infected with *M. tuberculosis*. Thus, the treatment of LTBI is essential to controlling and eliminating TB in the United States. Treatment of LTBI substantially reduces the risk that TB infection will progress to TB disease. LTBI is treatable with the use of medications: isoniazid (INH) for 9 months, or rifampin (RIF) for 4 months (RIF is typically reserved for those who cannot tolerate the INH). Preventive medications for individuals with TB infection are provided at no cost to local health departments or other medical providers.

**Reportable Disease in Kansas Since:** 2004

### ***Clinical Criteria***

A case that meets all of the following criteria:

- A positive tuberculin skin test result (based upon risk factors)
  - ≥ 5 mm is classified as positive in**
    - HIV positive persons
    - Recent contacts of a TB case
    - Persons with fibrotic changes on chest radiography consistent with old, healed TB
    - Patients with organ transplants and other immunosuppressed patients
  - ≥ 10 mm is classified as positive in**
    - Recent arrivals from high-prevalence countries
    - Injection drug users
    - Residents and employees of high-risk congregate settings
    - Mycobacteriology laboratory personnel
    - Persons with clinical conditions that place them at high risk
    - Children <4 years of age, or children and adolescents exposed to adults in high-risk categories
  - ≥ 15 mm is classified positive in**
    - Persons with no known risk factors for TB:
      - No signs and symptoms of active disease (i.e., productive cough, fever, night sweats)
      - Normal chest x-ray or an x-ray that is read as Negative for active TB disease
      - A completed diagnostic evaluation

### ***Laboratory Criteria for Surveillance Purposes***

- QuantiFERON® Gold is a blood test for detection of immune responses to latent tuberculosis TB infection. This test is new, and is not readily available for all Kansans to use due to the low percentage of labs certified in testing.

### ***Surveillance Case Definitions***

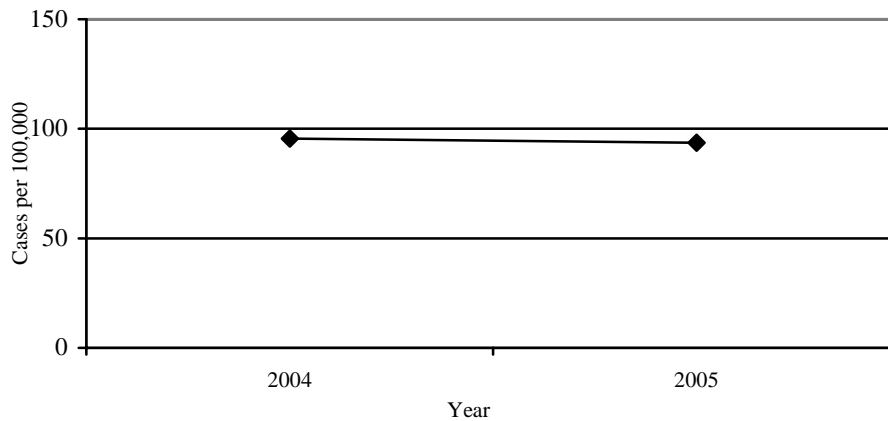
- *Confirmed:* A case that meets the clinical case definition **OR** is laboratory confirmed.

## *Epidemiology and Trends*

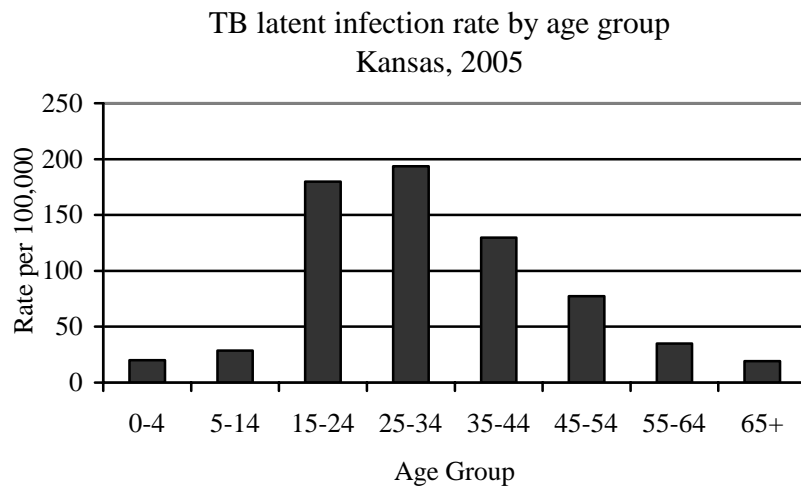
**2005 Kansas Count: 2561**

	<i>Rate per 100,000</i>	<i>95% CI</i>
Kansas Rate	93.6	(90.0 - 97.2)
U.S. Rate (2004)	NA	NA
<b><i>Gender</i></b>		
Male	105.1	(99.6 - 110.5)
Female	81.9	(77.1 - 86.7)
<b><i>Race</i></b>		
White	56.9	(53.9 - 59.9)
Black	231.9	(209.2 - 254.5)
Asian/Pacific Islander	745.6	(677.9 - 813.4)
Native American	58.5	(31.5 - 85.5)
<b><i>Ethnicity</i></b>		
Hispanic	419.0	(392.0 - 446.0)
Non-Hispanic	58.2	(55.2 - 61.2)
<b><i>Geographic area</i></b>		
Urban County	83.3	(78.5 - 88.1)
Non-Urban County	104.3	(98.9 - 109.8)

Latent TB infection incidence rate by year,  
Kansas\*, 2004-2005



\*A comparable U.S. rate is not available.



In 2005, 2,561 latent tuberculosis infections were reported in Kansas. Latent tuberculosis infections were first listed on the Kansas reportable disease list in 2004, when 2,611 cases were recorded. Infections are not tracked nationally—no comparable U.S. rate is available.